

## THE DEVELOPMENT OF TRANSPORTATION NETWORK MODEL TO SUPPORT THE NATURAL RESOURCE POTENTIAL

USMAN RIANSE<sup>1</sup>, ADRIS. A. PUTRA<sup>2</sup> & LA ODE MUH MAGRIBI<sup>3</sup>

<sup>1</sup>Professor, Universitas Haluoleo Kendari, Indonesia

<sup>2</sup>Universitas Haluoleo Kendari, Indonesia

<sup>3</sup>Universitas Haluoleo Kendari, Indonesia

### ABSTRACT

*The potential wealth of Konawe, is the enormous natural resources, but the great natural resources have not brought prosperity to the people. This is due to the limited road transport network resulting in a low accessibility and isolation of the region. The development of road infrastructure can have an effect on the increasing mobility of the population movement so as to increase the access to the resource productivity which ultimately encourages the economic growth.*

*This study aims to identify the condition of the road network that has the area of natural resource potential, as well as find the strategy of developing the land transportation network to support the distribution of production in the urban area of Konawe Regency. This research was conducted in 28 districts that entered Konawe District. The data were analysed by using Location Quotient (LQ) method to know the area of pontesi, and SWOT Analysis Method was used to determine the strategy of urban road network development of Konawe Regency.*

*The result of the research shows that the transportation infrastructure in Konawe Regency, especially the urban area of Konawe Regency road network has 27.05% of good condition, 14.84% moderate condition, 44.14% is in damaged condition and 13.97% weight. Based on the results of the LQ analysis of the potential matrix of urban areas by type of food crops, plantations and livestock Latoma District has 4 types of sub sectors of the largest potential area among the twenty-seven other districts. Based on SWOT analysis, the development of urban road networks of Konawe Regency is in the strength and opportunity strategy (SO).*

**KEYWORDS:** Transportation, Road Network, Potential & Distribution

**Received:** Aug 10, 2018; **Accepted:** Aug 30, 2018; **Published:** Sep 14, 2018; **Paper Id.:** IJECROCT20182

### INTRODUCTION

#### Background

The development of road network can increase the economic growth and reduce the gap between regions. Increased economic growth directly affects the standard of living of the community. With the increase in the economic growth, will be followed by the development of areas that allow optimal utilization of natural resources. Road network infrastructure plays an important role in maintaining the balance of goods and services distribution. In addition, it can reduce the expenditure of transportation and production costs from the natural resource potential locations to industrial sites to consumers of the industrial products.

Konawe Regency has considerable natural resource potential, especially in some types of agricultural crops and plantation crops. In line with the development of urban areas of Konawe Regency, it is deemed

necessary to maximize the utilization of the available road network to be used maximally in supporting the development of the region. Development of road network in Konawe Regency especially urban area is expected to increase aksesibilitas movement oriented to the distribution of existing agricultural products and aims to increase people's income in the agricultural and plantation sectors.

The condition of the road that most of the damages caused due to travel time and the level of low road service so that the transportation costs become increased, this causes the loss for the road users, especially in the case of waste of cost, time, fuel, low level of comfort and low road performance itself. Transportation problems can be solved when transport infrastructure is built and maintained in an integrated manner so as to provide broad benefits and impacts for the community.

Limitations of the development budget and the high cost of road maintenance / maintenance of the road network requires a change in the mindset towards the planning and determination of development priorities and the development of transportation infrastructure effectively, according to the needs based on the reality of the pattern of activity, the pattern of movement-pull movement, distribution of movement and comparative advantage between zones in a territory, which is formed within a territorial transport order.

To accelerate the growth of urban swarms of Konawe District, the local government has planned to develop the road network by opening the way to the production centers, so that inter-regions can interact with each other. This is in accordance with the general targets of government policies, especially in terms of traffic and road transport that is creating a transportation system in the area so that people and goods mobility can support economic growth and can meet the social needs of the community.

## **LITERATURE REVIEW**

### **Transportation System**

The transportation system plays an important role in promoting the development of the economic sector of the society as a whole to the development of an area (Murray, 2001). The transportation system is a system to make moving from one place to another, transportation system required a technique of planning on organizing to develop the optimal strategy in supply of facilities and infrastructure of the urban transportation system (Morlok, 1991).

Urban transport systems have consequences for social dimensions such as welfare and justice for society (Ahmed et al., 2008; Kenyon et al., 2002). A well-functioning transportation system is a contributing factor to the development of community activities, giving transportation access to trade, education and settlement centers. Incorrect transportation strategy and program development strategies, can damage land use, environment and public space capacity, in addition to ineffective service networks, will not meet the expectations of public transport users (World Bank 1996). The transport system in urban areas, related to the concentration of people, population and socioeconomic activities of the population (Loo and Chow, 2006).

Urban transportation system plan requires the integration of environmental, socioeconomic of the population, besides needing appropriate strategy to improve the transportation system, especially security aspect, comfort and arrangement of the land use system (Schiller et al., 2010). Development of a transportation system based on potential and characteristic of urban areas. Yao (2007) in his research explains that demand for public transport system based on potential area using characteristic variables of urban area and land use system.

## **Transport and Regional Development**

Development of good transportation can facilitate the movement of raw materials to reach the processing location or facilitate consumers in reaching the needs for goods. With the transportation, the increased production activity in a region will be pushed (Siagian, 1991). Good transportation arrangements can shape the characteristics of the region, according to the movement of the population and goods. Similarly, the increased socio-economic activity of the community may also affect the demand for transport.

Regional infrastructure system is a network that connects one activity center with another activity center, that is between one settlement with another settlement, between cultivation location and settlement location, and between one cultivation location and other cultivation location. The shape of the network is the infrastructure of roads, railways, river lanes, seas, lakes and so on which can be used for moving people and goods from one center to another. The development of the transportation infrastructure system is aimed at economic linkage and function among various centres of activity. Transportation system as well as forming structure and pattern of space utilization. Determination of transportation system related to spatial use pattern in various sub-region. It will be possible to examine the magnitude of the rise (people and goods that need transportation) in each sub-region and the purpose of the awakening (Tarigan, 2006).

The development of the area, according to Adisasmita (2005), is a development effort in an area or several regions to achieve the welfare of the community by utilizing the resources (nature, human, institutional, technology and infrastructure) effectively, optimally and sustainable by mobilizing activities productive activities (primary, secondary and tertiary sectors), provision of service facilities (economic and social), provision of infrastructure and facilities and the environment. The overall effort that leads to improvement in the level of welfare of society in general can be seen as the cause of the ongoing process of development of the region

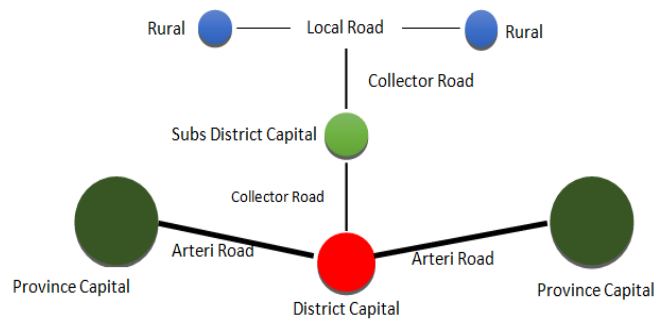
## **Road Network**

According to the Law of the Republic of Indonesia No.38 of 2004 concerning the way in article 1 explains that roads are land transportation infrastructures covering all parts of roads, including supplementary buildings and equipment intended for traffic, located at the surface of the land, under surface permits and / or water, and above the water surface, except railroads, lorries, and cable roads.

Accordingly, in the RI Law No.38 it is also affirmed in Chapter III Verse 8<sup>th</sup> on public roads, according to their functions grouped into arterial roads, collector roads and local roads.

- Arterial road is a public road that serves the main transport with long-distance traits, high average speed, and the number of entrances are limited efficiently.
- Collector road is a public road that serves to serve collecting or splitting carrier with medium distance, trajectory, medium average speed, and limited number of entrances.
- Local roads are public roads that serve local transport with characteristics of short distance travel, lower average speed, and unlimited number of entrances.

Line network of arterial, collector and local roads, according to Hendarto (2001), as in the picture below:



**Figure 1: Arterial, Collector and Local Road Network (Hendarto, 2001)**

Tamin (2002), said that the system of infrastructure and transportation facilities as basic infrastructure is a prerequisite for the economic movement of the people and as a support and support system in spurring the economic activities of the community, because it will greatly efficiency and effectiveness of the activities of the region. The problem of poverty occurs because of the low level of accessibility (connectedness) of the village centers with other areas that cause these villages to be less productive. One attempt to overcome this by improving the accessibility level of village centers or remote areas by utilizing transportation infrastructure in the form of district and local road network system to develop remote areas.

According to Jinca, et al. (2002), that the development of road networks as a driver to connect and open isolation areas, remote islands, transmigration areas and residential areas. The development of the road network is developed in an integrated manner with other modes of transportation in accordance with the city, city function, and functional hierarchy of the city by considering the advantages of transportation mode characteristics, environmental factors, energy consumption and spatial factors.

## DATA ANALYSIS METHOD

To find the problems in this research that focus on the potential of the area and the road network that serves the movement of people and goods that aims to support the urban areas of Konawe Regency, by doing the following steps:

### Identification of Potential Areas

Is an identification done to see the potential of natural resources that can be developed and is a natural wealth contained by a region and can be utilized for the benefit of regional development. Analysis method to see the potential of the region is approach of economic base theory or often called SLQ (Simple Location Quotient).

Calculation formula:

$$LQ = \frac{si/st}{Si/St}$$

Where:

LQ = Location Quotient

si = Production type komoditasi at the sub-district level

St = Number of productions of type of commodity j at the sub-district level

$S_i$  = Production type komoditasi at the district level

$S_t$  = Total production of commodities  $j$  at the district level.

The indication of LQ numbers is:

- If the sector LQ is  $> 1$ , it means that sector  $i$  is the base sector for the economy in the Urban Area of Konawe Regency.
- If the sector LQ is  $< 1$ , it means that sector  $i$  is not a base sector for the economy in the Urban Area of Konawe Regency.
- If LQ sector  $i = 1$ , it means that all sectors in Konawe District Urban Area is not base sector.

This method of analysis is used to provide an overview of the region's natural resource potential that can be developed within the Konawe Urban Area (Road Network Planning Basics, Public Work Departemen, 2003).

### **Policy Strategy**

SWOT analysis is a tool to determine the policy strategy of development of the road network by going through the following stages:

- The data retrieval stage is the evaluation stage of internal and external data in four sub-districts of the urban area of Konawe Regency.

This stage is used to determine the factors that become strengths, weaknesses, opportunities and threats. Internal and external data retrieval is done by interviewing and collecting quantitative data directly.

- Stage analysis is the stage of making external, internal matrix and SWOT matrix.

The steps of making the external, internal matrix as follows:

- Create a table that contains internal and external factors consisting of 4 columns.
- In column 1 the preparation of all the factors that are owned in four sub-districts in urban areas Konawe District by dividing into two parts, namely internal and external factors.
- Giving weight of each factor in column 2, ranging from 1 (very important) to 0 (not important).
- In column 3 the calculation of the rating of these factors based on the effect on the condition of the Urban. Range of rating value 1 means very less influence to 4 means very influential.
- Column 4 is filled by multiplying the weights in column 2 with the rating in column 3.
- Total sum of weighted scores for each internal (strength-weakness) and external (threat-threatening) factors. This value is placed in the appropriate quadrant to then make the SWOT matrix that will explain the alternative strategy used.

### **Stages of Decision Making**

In the decision-making phase, this SWOT matrix needs to refer back the external, internal matrix that results in the Urban position so that it can be known which combination of strategies is most appropriate. Based on the results of the

SWOT analysis, further formulated its development strategy. Development strategies are formulated by linking internal factors with external factors, thereby encompassing four types of development strategies. First, is the S-O (Strength-Opportunity) strategy, meaning a strategy that uses the power to take advantage of opportunities. Second, is the S-T strategy (Strength-Threat), meaning strategy that uses the power to ward off threats / obstacles). Third, is the strategy of W-O (Weakness - opportunity), meaning strategy to reduce the weakness to seize the opportunity. Fourth, it is a W-T (Weakness-Threat) strategy, meaning a strategy that minimizes weakness and counteract threats/ obstacles).

The four development strategies above are S-O, S-T, W-O, and W-T strategies referred to as TOWS Strategy. The analysis is the SWOT analysis. In planning the development of transportation infrastructure should be done by applying SWOT analysis and TOWS Strategy, in order to really base the existing condition of internal factors (strengths and weaknesses) and external factors (opportunities and threats/ obstacles) and also consider the tendency and change the future environment (medium term planning).

## **RESULTS AND DISCUSSIONS**

### **Road Network Analysis**

Road is an infrastructure through which land transports are very important role in facilitating the economic activities of either one city with another city, or between cities with villages and between villages with other villages.

Good road conditions will facilitate the mobility of the population and facilitate transport of goods in relation to other economic and social activities. Conversely, if the road conditions are not good, then the population will get difficulties in the relation of economic activities and other activities. In 2016, for the length of the road of Konawe Regency, there are 27.05 percent good condition, 14.84 percent moderate condition, 44.14 percent damaged condition, and 13.97 percent others are heavily damaged

### **Analysis of Natural Resources Potential of Konawe Regency**

In the future agribusiness seems to be a major mainstay economic activity for Konawe and Urban districts in particular. This is because agribusiness in the future has a significant role, which is able to provide local food and also able to improve the welfare of farming communities and spur economic growth area.

Such a robust agricultural development should be implemented in a sustainable manner so that productivity, efficiency and environmental sustainability are the variables that must simultaneously be objectives, through farmer empowerment and local rural resources. In order for the agricultural sector to become a pillar of the regional economy, the development of agribusiness managed agriculture, environment and should be a regional development agenda and spur the growth of the regional economy without reducing the carrying capacity of the environment.

Within the framework of regional economic development, it should refer to the experience of developmental failure that is always oriented to the city, in the hope of direct beneficial effects to the villages. But the real situation is the city's draining of resources to the village. Therefore, it is necessary to reorient the economic development of the region in Konawe Regency especially, in urban areas by placing villages as the center of regional economic growth.

### **Plants of Food**

The availability of food is important because it concerns the most basic human life. To maintain the existence of human being try to fulfil the requirement of food either directly or indirectly. If these primary needs cannot be met, food

insecurity will have far-reaching effects on the lives of more complex people. For regions whose economic structure is dominated by the agricultural sector, especially the food crops sub-sector, such as in Konawe Regency, where it becomes the place for most of its people to find the source of income, the existence and sustainability of this sub-sector become very strategic. For that reason, the Regional Government of Konawe Regency focuses on the agriculture sector, especially food crops, as one of the main programs in catalyzing regional economic growth.

The main data of food crops collected is the area of harvest and productivity (yield per hectare). Crop production is the result of multiplication between harvests area and productivity. Types of food crop data collected include paddy rice, paddy fields, and crops (corn, soybeans, peanuts, green beans, cassava and sweet potatoes).

To know the superiority of each subdistrict in the urban area of Konawe Regency, according to the type of food crop and the crops, then used LQ formula. From the calculation results obtained pictures of the subdistrict region, which is the base area of the economy, such as yam shown in following Table.

The formula used to calculate the LQ Value of Food Crops:

$$LQ = \frac{si/st}{Si/St}$$

Where:

LQ = Location Quotient

si = Production type komoditas i at the sub-district level

st = Number of production of type of commodity j at the sub-district level

Si = Production type komoditas i at the district level

St = Total production of komoditas j at the district level

Calculation of LQ value for rice plants in Amonggedo District

$$\begin{aligned} LQ &= \frac{3923 / 3977}{61310,1 / 64274,7} \\ &= \frac{0,9864}{0,9539} \\ &= 1,03 \end{aligned}$$

Further LQ values can be seen in the Layout table. 01 Results LQ Value of Food Crops According to the Kecamatan contained in the urban Circle of Konawe Regency, using the same formula.

Table 1: Results of LQ Value of Food Crops by District

No.	Jenis Tanaman	Kecamatan													
		Soropia	Lalunggasu Meeto	Sampara	Bondoala	Besulutu	Kapoiala	Anggalom oare	Morosi	Lambuya	Uepai	Puriala	Onembute	Pondidaha	Wonggeduku
		Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)
1	Padi sawah	0,00	0,00	0,00	1,00	0,00	0,85	0,00	1,03	0,92	1,05	0,80	1,05	0,91	1,00
2	Padi Ladang	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
3	Jagung	23,99	10,80	10,80	1,20	23,75	4,33	8,64	0,40	3,99	0,06	6,73	0,00	2,46	1,94
4	Kedelai	0,00	0,00	0,00	0,00	0,00	4,48	0,00	0,00	1,07	0,00	5,78	0,00	5,97	0,06
5	Kacang Tanah	0,00	54,98	172,78	9,57	103,67	0,00	138,23	1,52	0,00	0,00	1,20	0,00	0,91	0,00
6	Kacang Hijau	0,00	15,79	0,00	0,00	69,49	14,29	0,00	0,61	0,00	0,00	0,00	0,00	1,53	2,65
7	Ubi Kayu	119,98	110,44	67,49	1,25	53,99	4,86	0,00	0,83	2,15	0,11	0,94	0,00	0,24	0,38
8	Ubi Jalar	0,00	109,95	115,19	0,00	0,00	0,00	276,45	0,61	2,20	0,46	1,61	0,00	0,41	0,00

No.	Jenis Tanaman	Kecamatan													
		Amonggedo	Wonggeduku Barat	Wawotobi	Meluhu	Konawe	Unaaha	Anggaberu	Abuki	Latoma	Tongauna	Asinua	Padangguni	Tongauan Utara	Routa
		Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)	Luas Panen (Ha)
1	Padi sawah	1,03	1,04	1,01	1,03	1,01	1,05	0,83	1,03	0,10	1,05	0,96	1,04	0,00	0,00
2	Padi Ladang	0,00	0,00	0,00	0,00	0,00	0,00	15,83	0,00	77,07	0,00	0,00	0,00	0,00	0,00
3	Jagung	0,00	0,10	1,40	0,00	0,59	0,00	1,46	0,14	1,74	0,01	0,46	0,16	0,00	25,31
4	Kedelai	0,00	0,18	0,00	0,83	1,01	0,00	1,62	1,36	48,62	0,04	4,26	0,00	0,00	17,16
5	Kacang Tanah	0,00	0,00	1,03	0,00	5,28	0,00	16,90	0,00	31,78	0,00	4,87	0,00	0,00	95,33
6	Kacang Hijau	0,00	0,46	0,00	0,00	2,12	0,00	16,99	0,00	19,97	0,00	3,43	0,33	0,00	35,94
7	Ubi Kayu	2,72	0,06	0,56	2,38	0,41	0,00	13,20	0,44	4,65	0,07	1,14	0,52	0,00	0,00
8	Ubi Jalar	1,62	0,00	1,24	0,09	0,70	0,00	11,27	0,00	7,94	0,00	0,65	2,32	0,00	7,94

Source: Analysis Result, 2018

The formula used to calculate Plant LQ Plant Values

$$LQ = \frac{si/st}{Si/St}$$

Where:

LQ = Location Quotient

si = Production type komoditas i at the sub-district level

st = Number of production of type of commodity j at the sub-district level

Si = Production type komoditas i at the district level

St = Total production of komoditas j at kabupate level

Calculation of LQ Value for Coconut plant species in Kecamatan Amonggedo



$$\begin{aligned}
 LQ &= \frac{148 / 646}{1924 / 14017,6} \\
 &= \frac{0,2402}{0,1373} \\
 &= 1,75
 \end{aligned}$$

Further LQ values can be seen in the Layout table. 02 Result of LQ Value of Plantation Plant According to Kecamatan contained in Konawe District urban circle, using the same formula.

**Table 2: LQ Plantation Value According to District**

No.	Jenis Tanaman	Kecamatan													
		Soropia	Lalunggasu Meeto	Sampara	Bondoala	Besulutu	Kapoiala	Anggalo moare	Morosi	Lambuya	Uepai	Puriala	Onembute	Pondidaha	Wonggeduku
1	Kelapa	6,57	6,18	1,96	3,03	0,24	4,76	1,97	0,00	0,40	3,25	1,21	0,26	0,50	0,15
2	Kopi	0,00	0,18	0,00	0,29	0,51	0,60	1,81	0,00	0,37	0,61	1,80	0,00	0,00	0,15
3	Lada	0,06	0,09	1,04	0,47	0,35	0,59	1,20	0,00	1,76	0,72	5,32	0,60	1,47	1,76
4	Kakao	0,13	0,18	0,86	0,72	1,23	0,37	0,77	0,00	1,04	0,64	0,49	1,22	1,09	0,91

No.	Jenis Tanaman	Kecamatan													
		Amonggedo	Wonggeduku Barat	Wawotohi	Meluhu	Konawe	Unaaha	Anggaberu	Abuki	Latoma	Tongauna	Asinua	Paadanguni	Tongauna Utara	Routa
1	Kelapa	1,75	0,06	0,93	0,53	1,06	1,31	1,89	0,23	0,52	0,12	0,58	0,60	0,00	0,08
2	Kopi	1,94	0,03	0,25	1,13	0,42	0,47	0,71	0,22	5,28	5,58	5,55	0,25	0,00	2,11
3	Lada	1,68	0,91	3,97	0,40	0,46	2,14	0,81	0,12	0,09	0,69	1,43	0,09	0,00	1,31
4	Kakao	0,75	1,22	0,74	1,14	1,07	0,85	0,87	1,26	1,00	0,99	0,84	1,20	0,00	1,09

**Source:** Analysis Result, 2018

The formula used to calculate the LQ Value of Livestock / Ungas Population Population

$$LQ = \frac{si/st}{Si/St}$$

Where:

LQ = Location Quotient

si = Production type komoditas i at the sub-district level

st = Number of production of type of commodity j at the sub-district level

Si = Production type komoditas i at the district level

St = Total production of komoditas j at kabupate level

Calculation of LQ Value for Cattle in Amonggedo District

$$\begin{aligned}
 LQ &= \frac{3762 / 61.383}{45.692 / 2.320.038} \\
 &= \frac{0,061}{0,019} \\
 &= 3,11
 \end{aligned}$$

Further LQ values can be seen in the Layout table. 03 Result LQ Value Population Species of livestock/ unggas According to the Kecamatan contained in the urban Circle of Konawe Regency, using the same formula.

**Table 3: Result of LQ Value Population Types of Livestock / Ungas According to Kecamatan**

No.	Jenis Tanaman	Kecamatan													
		Amonggedo	Wonggeduku Barat	Wawotobi	Meluhu	Konawe	Unaaha	Anggaberu	Abuki	Latoma	Tongauna	Asinua	Padanguni	Tongauan Utara	Routa
1	Sapi	3,11	0,25	1,14	7,64	0,22	0,38	2,56	0,71	9,24	1,25	0,69	0,71	1,05	0,49
2	Kerbau	1,03	0,53	0,00	0,00	0,00	0,00	1,53	1,05	22,34	0,70	0,00	1,05	0,68	0,00
3	Kuda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
4	Kambing	4,15	1,32	0,63	8,68	1,13	0,25	1,02	0,35	4,36	0,42	0,42	0,35	0,42	1,02
5	Domba	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
6	Babi	0,00	3,11	0,00	0,00	0,00	2,11	0,00	0,00	0,00	0,00	0,00	0,00	40,13	0,00
7	Ayam	2,08	1,63	0,27	0,29	0,66	0,21	2,02	1,35	1,21	0,54	0,27	1,34	0,70	2,35
8	Ayam Petelur	1,97	1,55	0,26	0,27	0,62	0,20	1,92	1,28	1,34	0,51	0,25	1,27	1,25	2,23
9	Ayam Pedaging	0,00	3,11	0,00	0,00	0,00	2,11	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
10	Itik	2,08	1,63	0,27	0,29	0,66	0,21	2,02	1,35	1,21	0,54	0,27	1,34	0,54	2,35
11	Itik Manila	1,97	1,55	0,26	0,27	0,62	0,20	1,92	1,28	1,34	0,51	0,25	1,27	0,51	2,23

No.	Jenis Tanaman	Kecamatan													
		Soropia	Latunggasu Meeto	Sampara	Bondoala	Beslutu	Kapotala	Anggalom are	Morosi	Lambuya	Uepai	Puriala	Onembute	Pondidaha	Wonggeduku
1	Sapi	0,52	0,13	4,38	7,23	0,83	0,24	4,48	6,89	0,25	0,76	4,95	1,36	0,98	0,25
2	Kerbau	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,09	13,58	0,72	0,00	0,54
3	Kuda	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	20,92	34,42
4	Kambing	0,80	2,04	4,72	10,35	10,90	0,48	4,71	9,69	0,45	0,33	1,63	0,40	1,12	1,32
5	Domba	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
6	Babi	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,68	10,79	0,00	0,51	7,15	10,37
7	Ayam	1,89	1,96	1,83	1,44	1,78	2,10	1,83	1,35	0,54	0,51	1,86	0,60	0,16	1,14
8	Ayam Petelur	2,68	1,88	0,64	1,22	0,68	1,16	0,66	25,69	0,49	1,06	1,04	0,40	1,17	1,55
9	Ayam Pedaging	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3,87	0,00	0,00	0,00	3,11
10	Itik	2,83	1,99	0,70	1,26	0,73	1,22	0,70	1,18	0,51	1,11	1,10	0,43	1,23	1,63
11	Itik Manila	2,68	1,88	0,64	1,22	0,68	1,16	0,66	25,69	0,49	1,06	1,04	0,40	1,17	1,55

Source: Analysis Result, 2018

### Road Development Network Policy Strategy

SWOT analysis is a tool used to determine the policy strategy of road network development with the following stages:

- The data retrieval stage is the evaluation stage of internal and external data in four sub-districts of the urban area of Konawe Regency.

This stage is used to determine the factors that become strengths, weaknesses, opportunities and threats. Internal and external data retrieval is done by interviewing and collecting quantitative data directly.

- Stage analysis is the stage of making external, internal matrix and SWOT matrix.

The steps of making the external, internal matrix as follows:

- Create a table that contains internal and external factors consisting of 4 columns.
- In column 1 the preparation of all the factors that are owned in four sub-districts in urban areas Konawe District by dividing into two parts, namely internal and external factors.
- Giving weight of each factor in column 2, ranging from 1 (very important) to 0 (not important).
- In column 3 the calculation of the rating of these factors based on the effect on the condition of the Urban. Range of rating value 1 means very less influence to 4 means very influential.
- Column 4 is filled by multiplying the weights in column 2 with the rating in column 3.
- Total sum of weighted scores for each internal (strength-weakness) and external (threat-threatening) factors. This value is placed in the appropriate quadrant to then make the SWOT matrix that will explain the alternative strategy used.

Procedure to calculate the value by using SWOT Analysis as in Appendix table. 09 Total Value from Stakeholders, Value Factor, Weight, Rating and Score are as follows:

- **Number of Values from Stakeholders**

$$\begin{aligned}\text{Amount} &= \text{Public Works} + \text{BAPEDA} + \text{Department of Transportation} + \text{Academics} \\ &= 15 + 12 + 17 + 19 \\ &= 63\end{aligned}$$

- **Calculating the Value Factor**

$$\begin{aligned}\text{Average} &= \text{Total value from Stakeholder} / \text{Total Number of Respondents} \\ &= 63/20 \\ &= 3.15\end{aligned}$$

- **Calculating Weight Value**

$$\begin{aligned}\text{Weight} &= \text{Average} / \text{average number for strength factor} + \text{Average number of weaknesses} \\ &= 3.15 / 31.60 + 14.15 \\ &= 3.15 / 45.75 \\ &= 0.069\end{aligned}$$

- **Determining Rating Value**

While the value of the rating obtained by providing value on internal and external factors with the scale of assessment from 4 samapi based on the influence of these factors on the location of the study. Positive factors (all factors in the power category) are rated from 1 to 4. The rating rating for the power factor is positive (greater power is rated 4, but if the strength is small is rated 1). The rating of the weakness rating is the reverse. For example, if the value of weakness is

very large rating 1. Conversely, if the weakest value slightly rating 4. Weighting and twig are based on the results of data collection in the form of literature study, questionnaires, field observation and interview results.

**Example:** Land and geographic potential of Konawe District Specifically in urban area The value of Factor = 3.15, its rating is equal to 4 because its factor value is 3.15 and it is entered on internal factor (Strength) is positive as described above. While the average value of internal factors (weakness), for example: The unavailability of local markets that serve agricultural products and plantations in large quantities in Konawe District Value factor = 1.92, the rating is equal to 4 because the value factor of 1.92. This means that if the value of power factor is greater than the value of the rating is equal to 4 to 1 depending on the value of the factor, if the weakness value is greater than the rating is equal to 1 to 4 depending on the value of each factor. Further rating of each factor can be seen in appendix.09 Number of stakeholder value, factor value, Weight, Rating and score.

- **Calculating Score Value**

Score = Weight X Rating

= 0.069 X 4

= 0.275

Description: The next calculation can be seen in the attachment. 04 Total Value Of Stakeholders, Value Factor, Weight, Rating and Score using the same formula as described above.

**Table 4: Total Value of Stakeholders, Value Factor, Weight, Rating and Score**

No.	Faktor Internal	Nilai Dari Stakeholder		Bobot	Ranting	Score
		Jumlah	Nilai Faktor			
<b>A</b>	<b>Kekuatan (Strength)</b>					
1	Potensi lahan dan geografis Kabupaten Konawe Khususnya diwilayah perkotaan	63	3,15	0,069	4	0,275
2	Peningkatan jumlah atau permintaan transportasi antar wilayah	56	2,80	0,061	3	0,184
3	Pembangunan atau pemeliharaan ruas jalan diatas lahan potensial empat Kecamatan yang berada dalam wilayah perkotaan Kabupaten Konawe	65	3,25	0,071	4	0,284
4	Rencana pembangunan jangkah menekah di Kabupaten Konawe.	66	3,30	0,072	4	0,289
5	Kekayaan sumber daya alam Kabupaten Konawe.	70	3,50	0,077	4	0,306
6	Komitmen yang kuat dari pemerintah dalam percepatan pembangunan jaringan jalan Kabupaten Konawe.	72	3,60	0,079	4	0,315
7	Tersedianya Bandar udara Sugi Manuru Kabupaten Konawe.	59	2,95	0,064	3	0,193
8	Tersedianya pelabuhan tondasi yang menghubungkan antar daerah sebagai jalur pendistribusian sumber daya alam dan sumber daya manusia.	69	3,45	0,075	4	0,302
9	Potensi wilayah pengelolaan sector pariwisata Kabupaten Konawe.	57	2,85	0,062	3	0,187
10	Permintaan investor untuk berinvestasi di Kabupaten Konawe.	55	2,75	0,060	3	0,180
<b>Jumlah Kekuatan (Strength)</b>			<b>31,60</b>			<b>2,515</b>
<b>B</b>	<b>Kelemahan (Weakness)</b>					
1	Tidak tersedianya pasar lokal yang melayani hasil-hasil pertanian dan perkebunan dalam jumlah banyak di Kabupaten Konawe.	39	1,95	0,043	4	0,170
2	Kondisi jalan rusak yang menghubungkan sentral-sentral produksi pertanian dan perkebunan di Kabupaten Konawe.	58	2,90	0,063	2	0,127
3	Terbatasnya mobil angkutan untuk melayani masyarakat.	38	1,90	0,042	4	0,166

4	Kualitas sumber daya manusia di Kabupaten Konawe Khususnya di wilayah perkotaan.	58	2,90	0,063	2	0,127
5	Minimnya ketersediaan tempat peristirahatan (Hotel atau penginapan) bagi pelaku usaha atau investor di Kabupaten Konawe.	34	1,70	0,037	4	0,194
6	Harga dan kualitas material yang kurang baik khususnya material pembangunan jalan yang bersumber dari Kabupaten Konawe itu sendiri.	56	2,80	0,061	1	0,061
<b>Jumlah Kelemahan (Weakness)</b>			<b>14,15</b>			<b>0,800</b>
<b>No.</b>	<b>Faktor Eksternal</b>					
<b>A</b>	<b>Peluang (Opportunity)</b>					
1	UU No. 32 tahun 2004 tentang otonomi daerah.	67	3,35	0,144	4	0,575
2	Pengembangan jaringan jalan mengacu pada Rencana Tata Ruang Wilayah Kabupaten (RTRWK).	68	3,40	0,146	4	0,584
3	Letak kawasan perkotaan Kabupaten Konawe strategis	68	3,40	0,146	4	0,584
4	UU No. 33 tahun 2004 tentang keuangan pusat dan daerah.	62	3,10	0,133	4	0,532
<b>Jumlah Peluang (Opportunity)</b>			<b>13,25</b>			<b>2,275</b>
<b>B</b>	<b>Ancaman (Threat)</b>					
1	Pencapaian fungsi perkotaan yang lambat.	60	3,00	0,129	1	0,129
2	Kurangnya minat investor untuk mengelolah sector Produktif (pertanian dan perkebunan).	54	2,70	0,166	2	0,232
3	Lambatnya pertumbuhan wilayah perkotaan berpengaruh pada perekonomian masyarakat.	44	2,20	0,094	4	0,378
4	Terbatasnya akses jalan antar wilayah Kabupaten Konawe.	43	2,15	0,092	4	0,369
<b>Jumlah Ancaman (Threat)</b>			<b>10,05</b>			<b>1,107</b>

Source: Analysis Result, 2018

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- The condition of the urban road network of Konawe Regency that has the potential area of Natural Resources is as follows:
  - Based on the results of the LQ analysis of the potential matrix of urban areas according to the type of plant Food, Plantation and Livestock Sub District Latoma has 4 types of sub sectors of the most potential area among the twenty-seven other districts.
  - Based on the results of the LQ analysis, the potential matrix of urban areas according to the types of food crops, plantations and livestock in Kecamatan Soropia has 3 sub sectors of potential area equal to Besulutu sub-district.
  - Based on the results of the LQ analysis of the potential matrix of urban areas according to the type of plant Food, Plantation and Livestock District Morosi only has 2 types of Sub Sector of potential area equal to District Routa.
  - Based on the LQ analysis, the potential matrix of urban area according to the type of food plantation, plantation and livestock of Unaaha sub-district, Tongauna sub-district, Wonggeduku sub-district, North Tongauna district and Uepai sub-district has only 1 sub sector of potential region.
- From the SWOT analysis of the development strategy of the land transportation network of Konawe Regency, we get the strength and opportunity strategy (SO). The strategy is as follows:
  - Increased agricultural production of food crops, plantations and livestock.
  - The availability of road infrastructure and marketing facilities of agricultural products, plantations and

livestock.

- Optimizing the development of transportation infrastructure to meet the needs of inter-regional transportation and support the development of the region.
- Implementation of policies that regulate procedures / requirements that support the investment in the agricultural and plantation sector.
- Synchronization of transport sector policies, regional development and economic development.

### Suggestion

The suggestions related to the study of the development of urban road networks of Konawe Regency are as follows:

- The seriousness of the Government of Konawe Regency in optimizing the development of road network, in order to support the distribution of agricultural products and plantations marketing location.
- For further research is expected to analyse the potential of natural resources of Konawe Regency as a whole related to road condition in determining policy of the development strategy of land transportation network.
- In order to support the successful development of the land transportation network of Konawe District, a strong commitment from relevant parties in terms of policy, as well as careful planning in the field of transportation ranging from planning, management and control of infrastructure and transportation facilities.

### REFERENCES

1. Adisasmita, H Rahardjo. 2005. *Regional Economic Basics*. Makassar: Graha Ilmu.
2. Ahmed, Q. I., Huapu, L., dan Shi, Y, 2008, *Urban transportation and equity: A case study of Beijing and Karachi, Transportation Research Part A: Policy and Practice*, Vol. 42, pp. 125–139.
3. Hendarto., 2001. *Basics of Transportation*. ITB Bandung.
4. Jinca, M. Y. dkk., 2002. *Transportation Planning. Cooperation between the Faculty of Engineering, Hasanuddin University, with the Center for Education in BPSDM, Department of Regional Infrastructure, Bandung*
5. Kenyon, S., Lyons, G., dan Rafferty, J., 2002, *Transport and social exclusion: investigating the possibility of promoting inclusion through virtual mobility, Journal of Transportation Geography*, Vol. 10, No. 3, pp. 207–219.
6. Loo, B. P. Y., dan Chow, S. Y., 2006, *Sustainable Urban Transportation: Concepts, Policies, and Methodologies*”, *Journal of Urban Planning and Development*, Vol. 132, No. 2, pp. 76–79.
7. Murray., 2001, *Strategic Analysis Of Public Transport Coverage, Social Economic Planning Sciences*, 35,3: pp 1175-188.
8. Schiller, P. L., Brunn, E. C., dan Kenworthy, J. R., 2010, *An Introduction to Sustainable Transportation: Policy, Planning And Implementation*, London: Earthscan.
9. Siagian Sondang. P. 1991. *Organization, Leadership and Administrative Behavior*. Jakarta: Gunung agung.
10. Tamin, O. Z., 2000, *Transportation Planning and Modeling*, 2nd edition, Penerbit ITB, Bandung.
11. World Bank., 1996, *Sustainable Transport: Priorities for Policy Reform. The International Bank for Reconstruction and Development/The World Bank*, Washington, D.

12. Yao, X., 2007, *Where Are Public Transit Needed, Examining Potential Demand For Public Transit For Commuting Trips.*" *Computers, Environment, and Urban Systems.* 31, 535-550.
13. Amudhasurabi, A., Carlberg, J., Jayas, D. S., & Ravikanth, L. *Impacts Of Grain Handling And Transportation System Deregulation On Farm Profitability In Manitoba Province Of Canada.*

